

Cruise Report: 1986 Lake Superior OBS experiment

*Nancy
Soderberg.*

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In ADCRSM

#438

5-6018

- 1) Ship: USCGC Katmai Bay
- 2) Number: GL86
- 3) Parent Project: Deep crustal studies
- 4) Funding agency: USGS
- 5) Funding amount: \$25,000
- 6) Contract no.: —
- 7) Contract dates: —
- 8) Area of operations: Lake Superior
- 9) Cruise dates:
 - 8/30 - leave Sault Ste. Marie, MI
 - 9/02 - arrive Marquette, MI
 - 9/03 - leave Marquette, MI
 - 9/05 - arrive Sault Ste. Marie, MI
- 10) Chief Scientist: A.M. Trehu
- 11) Cruise data curator: A.M. Trehu
- 12) Scientific party: A.M. Trehu (USGS)
G. Miller (USGS)
- 13) Ship's captain: Lt. J.F. Boyd
- 14) Purpose of cruise: This course was part of a large-scale effort by the U.S. Geological Survey and the Geological Survey of Canada to image the deep crustal structure of the Great Lakes region. A report on the entire project is being prepared by John Behrendt. This cruise report covers the operations of the ocean bottom seismometers (OBS), which were deployed along a line across Lake Superior to record large-offset seismic data from a series of shots generated by a commercial contract vessel.
- 15) Navigation techniques: Loran C
- 16) Scientific instrumentation: 5 USGS OBS's, fathometer
- 17) Tabulated information
 - a. 5 days at sea
 - b. 5 stations occupied. During the first leg, an instrument was deployed at each station, and then ranges to the instrument were measured acoustically from 4-5 points around the deployment site. The stations were then reoccupied to retrieve the instruments during the second leg.

c.	station	lat.	lon.	depth (fm)	comment
	A8	48°32.895'	87°09.687'	80	1 track data
	A2	48°15.514'	87°15.339'	127	4 tracks (full tape)
	C4	47°57.904'	87°20.709'	114	4 tracks
	C9	47°40.203'	87°26.005'	88	4 tracks
	C3	47°09.157'	87°36.508'	67	4 tracks

Deployed
8/31/86

18. Figure 1: Track chart showing actual OBS station locations and planned shot lines. A final track chart of the shot times can be found in the report on the entire program prepared by John Behrendt.
19. Preliminary plots of record sections from this experiment indicate that the data are of excellent quality. Good signal-to-noise ratios are obtained out to the largest offsets recorded (185 km).

cc: Bob Halley
Kim Klitgord
Debbie Hutchinson
Tom Aldrich
Nancy Soderberg
Greg Miller
John Behrendt

d Others

